

REMARKS

Summary

Applicants gratefully acknowledge the Examiner's withdrawal of the Final Office Action dated March 9, 2007 and the premature Advisory Action dated July 6, 2007. Applicants also gratefully acknowledge the Examiner's finding of allowable subject matter in the October 12, 2007 Office Action. In that Office Action, claims 33-35, 43, 50, 53, 105-107, 111, 119, 124-125, 130-131, 135-137 were found to contain allowable subject matter, and would be allowed if rewritten in independent form.

Claims 30-31, 33-43, 46-52, 78-80, 82, 102-103, 105-110, and 114-140 are pending after entry of this amendment. Independent claim 30 is amended herein to include the limitations of allowable dependent claim 53, and independent claims 102 and 132 are amended herein to include the limitations of allowable dependent claim 111. To avoid redundancy with the amended claims, claims 53 and 111 are cancelled herein. Claims 33-35, 43, 105-107, 125, 131, 135-137 are amended herein to replace "(Ga,N)" and analogous notation with the terminology suggested by the Examiner on page 2 of the October 12th Office action (e.g., "gallium nitride"). New claims 141-143 correspond to the prior versions of allowable dependent claims 43, 50 and 124, respectively. New claim 144 corresponds to former independent claim 132 combined with the allowable subject matter of former dependent claim 53. No new matter has been added by way of the present amendment.

Substance of Interview

Applicants appreciate the Examiner's time on October 2, 2007 to conduct a telephonic interview. In the Examiner's Interview Summary provided with the October 12th Office Action, it was written that: "In the Lee reference, Ms. Rittner argues that Lee's elemental compounds are not amorphous compounds as the examiner implied in the final Office Action. Instead, Ms. Rittner contends that Lee's elemental compounds are actually polycrystalline compounds." The undersigned agent (Ms. Rittner) hereby wishes to correct the record regarding the discussion of Lee's elemental compounds. It

was pointed out by the undersigned during the interview that there is no teaching or suggestion in Lee that the elemental compounds are amorphous. The undersigned did not further characterize the elemental compounds.

Claim Objections

The Examiner objected to claims 33-35, 43, 105-107, 111, 125, and 135-137 because of the inclusion of a bracket with a comma and required appropriate correction. As noted above, claims 33-35, 43, 105-107, 125, 131, 135-137 are amended herein to replace "(Ga,N)" and similar bracket/comma notation with the terminology suggested by the Examiner on page 2 of the October 12th Office Action (e.g., "gallium nitride"). Consistent with the description in the specification of the bracket/comma notation (e.g., paragraphs [0055]-[0056]), however, the claimed terminology is to be broadly construed as not necessarily requiring a one-to-one ratio of the components.

Rejections Under 35 U.S.C. § 103

The Examiner rejected claims 30-31, 36-42, 46-49, 51-52, 78-80, 82, 102-103, 108-110, 114-123, 126-129, and 132-140 under 35 U.S.C. 103(a) as unpatentable over Kobayashi (US 5,858,855) in view of Mackawa (US 6,066,547). In view of the amendments herein to independent claims 30, 102, and 132, Applicants respectfully disagree.

Amended claim 30 recites, inter alia, depositing low temperature grown semiconductor bonding layers on first and second structures by molecular beam epitaxy (MBE) at a temperature of at most about 100°C, as previously recited in claim 53 (now cancelled). Claim 53 was found to be allowable except for its dependence on a rejected base claim (prior claim 30) in the October 12th Office Action. Applicants therefore respectfully submit that, at least for this reason, amended claim 30 is in condition for allowance.

Amended claims 102 and 132 recite, inter alia, that at least one of the bonding layers comprises one of gallium arsenide, gallium phosphide, and gallium nitride, as previously recited in claim 43 and claim 111 (now cancelled). Claims 43 and 111 were found to be allowable by the Examiner in the October 12th Office Action except for their

dependence on rejected base claims (prior claims 30 and 102, respectively). Applicants therefore respectfully submit that, at least for this reason, amended claims 102 and 132 are in condition for allowance.

Patentability of New Claims

New claim 141 contains the limitations of prior independent claim 30 and dependent claim 43. Claim 43 was found to be allowable by the Examiner in the prior Office Action except for its dependence on a rejected base claim (prior claim 30). At least for this reason, Applicants submit that new claim 141 is allowable over the prior art of record.

New claim 142 includes the limitations of prior independent claim 30 and dependent claim 50. Claim 50 was found to be allowable in the prior Office Action except for its dependence on a rejected base claim (prior claim 30). At least for this reason, Applicants submit that new claim 142 is allowable over the prior art of record.

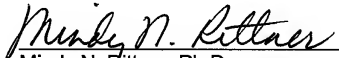
New claim 143 includes the limitations of prior independent claim 30 and dependent claim 124. Claim 124 was found to be allowable in the prior Office Action except for its dependence on a rejected base claim (prior claim 30). At least for this reason, Applicants submit that new claim 143 is allowable over the prior art of record.

New claim 144 includes the limitations of prior independent claim 132 and dependent claim 53. Claim 53 was found to be allowable in the prior Office Action except for its dependence on a rejected base claim (prior claim 30). At least for this reason, Applicants submit that new claim 144 is allowable over the prior art of record.

Conclusions

Applicants respectfully submit that all of the pending claims are in condition for allowance. If for any reason the Examiner is unable to allow the application in the next Office Action and believes that a telephone interview would be helpful to resolve any remaining issues, the Examiner is invited to contact the undersigned.

Respectfully submitted,

A handwritten signature in black ink, reading "Mindy N. Rittner", written over a horizontal line.

Mindy N. Rittner, Ph.D.
Registration No. 57,803
Agent for Applicants

BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, ILLINOIS 60610
(312) 321-4200